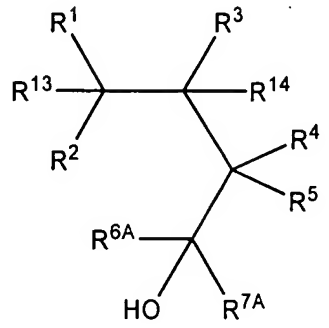
WE CLAIM:

1. A fluorinated polyol having the structure of formula (IV)

(IV)



wherein:

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

R^2, R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a ring;

R^{6A} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino;

R^{7A} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, and further wherein R^{6A} and R^{7A} may be taken together to form a ring, with the proviso that at least one of R^{6A} and R^{7A} is fluorinated; and

one of R^{13} and R^{14} is hydroxyl and the other is selected from hydrogen and hydroxyl.

2. The fluorinated polyol of claim 1, wherein:

R^1 is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^2 is selected from hydrogen, C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, and fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_3-C_{30} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_{12} alkyl, and C_1-C_{12} haloalkyl;

R^{7A} is C_1-C_{12} alkyl or C_1-C_{12} haloalkyl; and

one of R^{13} and R^{14} is hydroxyl and the other is hydrogen.

3. The fluorinated polyol of claim 2, wherein:

R^1 is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^2 is hydrogen or C_1-C_8 alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_8 alkyl, and fluorinated hydroxyalkyl having the structure $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_6 aliphatic, R^{8A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^{9A} is

fluorinated C_1-C_8 alkyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_3-C_{18} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl; and

R^{7A} is C_1-C_8 alkyl or fluorinated C_1-C_8 alkyl.

4. The fluorinated polyol of claim 3, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_5-C_{14} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

R^{7A} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

5. The fluorinated polyol of claim 4, wherein R^{6A} and R^{7A} are both trifluoromethyl.

6. The fluorinated polyol of claim 4, wherein one of R^{6A} and R^{7A} is methyl and the other is trifluoromethyl.

7. The fluorinated polyol of claim 4, wherein:

R^2 and R^3 are taken together to form a C_3-C_{30} alicyclic group;

R^{13} is hydrogen; and

R^{14} is hydroxyl.

8. The fluorinated polyol of claim 7, wherein:

R^1 is hydrogen; and

R^2 and R^3 are taken together to form a C_3-C_{18} alicyclic group.

9. The fluorinated polyol of claim 8, wherein:

R^2 and R^3 are taken together to form a C_5-C_{14} alicyclic group.

10. The fluorinated polyol of claim 11, wherein R^4 and R^5 are hydrogen.

11. The fluorinated polyol of claim 4, wherein:

R^2 and R^3 are taken together to form a C_3-C_{30} alicyclic group;

R^{13} is hydroxyl; and

R^{14} is hydrogen.

12. The fluorinated polyol of claim 11, wherein:

R^1 is hydrogen; and

R^2 and R^3 are taken together to form a C_3-C_{18} alicyclic group.

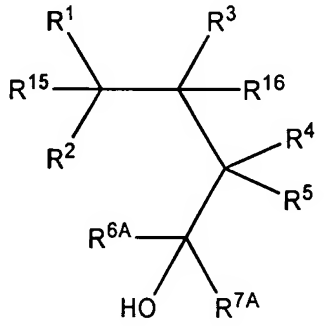
13. The fluorinated polyol of claim 12, wherein:

R^2 and R^3 are taken together to form a C_5-C_{14} alicyclic group.

14. The fluorinated polyol of claim 13, wherein R^4 and R^5 are hydrogen.

15. A fluoroalkanol-substituted α,β-unsaturated ester having the structure of formula (V)

(V)



wherein:

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

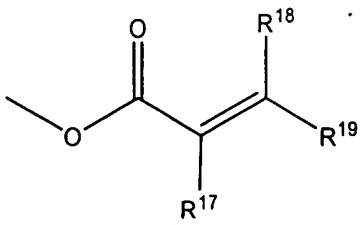
R^2, R3, R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a ring;

R^{6A} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino;

R^{7A} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, and further wherein R^{6A} and R^{7A} may be taken together to form a ring, with the proviso that at least one of R^{6A} and R^{7A} is fluorinated; and

one of R^{15} and R^{16} is hydrogen, and the other has the structure of formula (VI)

(VI)



in which R^{17} is selected from hydrogen, fluoro, C_1-C_4 alkyl, fluorinated C_1-C_4 alkyl, -CH_2-COOH, -CF_2-COOH, -CH_2-$COOR^{20}$, and -CF_2-$COOR^{20}$, R^{18} is hydrogen or fluoro, R^{19} is hydrogen, fluoro, or -COOH, and R^{20} is a nonhydrogen substituent.

16. The fluoroalkanol-substituted α,β-unsaturated ester of claim 15, wherein:

R^1 is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^2 is selected from hydrogen, C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, and fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_3-C_{30} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_{12} alkyl, and C_1-C_{12} haloalkyl;

R^{7A} is C_1-C_{12} alkyl or C_1-C_{12} haloalkyl;

R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, $-CH_2-COOH$, and $-CH_2-COOR^{20}$;

R^{18} and R^{19} are independently selected from hydrogen and fluoro; and

R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl.

17. The fluoroalkanol-substituted α,β-unsaturated ester of claim 16, wherein:

R^1 is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^2 is hydrogen or C_1-C_8 alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_8 alkyl, and fluorinated hydroxyalkyl having the structure $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_6 aliphatic, R^{8A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^{9A} is fluorinated C_1-C_8 alkyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_3-C_{18} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl;

R^{7A} is C_1-C_8 alkyl or fluorinated C_1-C_8 alkyl;

R^{17} is selected from hydrogen and methyl; and

R^{18} and R^{19} are hydrogen.

18. The fluoroalkanol-substituted α,β-unsaturated ester of claim 17, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_5-C_{14} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

R^{7A} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

19. The fluoroalkanol-substituted α,β-unsaturated ester of claim 17 wherein R^2 and R^3 are taken together to form a C_3-C_{18} alicyclic group.

20. The fluoroalkanol-substituted α,β-unsaturated ester of claim 18, wherein R^2 and R^3 are taken together to form a C_5-C_{14} alicyclic group.

21. The fluoroalkanol-substituted α,β-unsaturated ester of claim 18, wherein R^4 and R^5 are hydrogen.

22. The fluoroalkanol-substituted α,β-unsaturated ester of claim 19, wherein R^4 and R^5 are hydrogen.

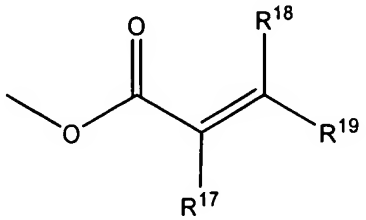
23. The fluoroalkanol-substituted α,β-unsaturated ester of claim 20, wherein R^4 and R^5 are hydrogen.

24. The fluoroalkanol-substituted α,β-unsaturated ester of claim 18, wherein R^{6A} and R^{7A} are both trifluoromethyl.

25. The fluoroalkanol-substituted α,β-unsaturated ester of claim 18, wherein one of R^{6A} and R^{7A} is methyl and the other is trifluoromethyl.

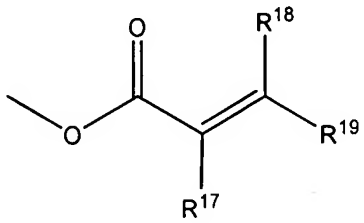
26. The fluoroalkanol-substituted α,β-unsaturated ester of claim 15, wherein R^{15} is hydrogen and R^{16} has the structure of formula (VI)

(VI)



27. The fluoroalkanol-substituted α,β-unsaturated ester of claim 15, wherein R^{15} has the structure of formula (VI)

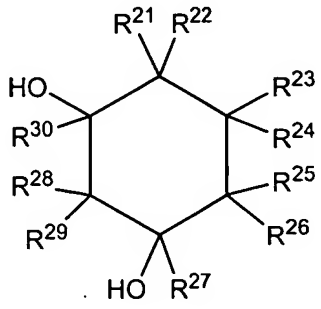
(VI)



and R^{16} is hydrogen.

28. A fluoroalkanol-substituted α,β-unsaturated ester having the structure of formula (VII)

(VII)



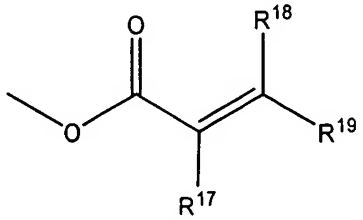
wherein:

R^{21} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

R^{22} is selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, or may be taken together with R^{21} to form a ring;

one of R^{23} and R^{26} is hydrogen, and the other has the structure of formula (VI)

(VI)



wherein R^{17} is selected from hydrogen, fluoro, C_1-C_4 alkyl, fluorinated C_1-C_4 alkyl, -CH_2-COOH, -CF_2-COOH, -CH_2-$COOR^{20}$, and -CF_2-$COOR^{20}$, R^{18} is hydrogen or fluoro, R^{19} is hydrogen, fluoro, or -COOH, and R^{20} is a nonhydrogen substituent;

R^{24} and R^{25} are selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl, or may be taken together to form a ring;

R^{27} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, and R^{30} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, with the proviso that at least one of R^{27} and R^{30} is fluorinated; and

R^{28} and R^{29} are independently selected from hydrogen, fluoro, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, or may be taken together to form a ring.

29. The fluoroalkanol-substituted α,β-unsaturated ester of claim 28, wherein:

R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, $-CH_2-COOH$, and $-CH_2-COOR^{20}$;

R^{18} and R^{19} are independently selected from hydrogen and fluoro;

R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl;

R^{21} is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^{22} is selected from hydrogen, C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl;

R^{24} and R^{25} are selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy, or may be taken together to form a C_3-C_{30} alicyclic group;

R^{27} is selected from hydrogen, C_1-C_{12} alkyl, and C_1-C_{12} haloalkyl;

R^{28} and R^{29} are independently selected from hydrogen, fluoro, C_1-C_{12} alkyl, and substituted C_1-C_{12} alkyl; and

R^{30} is C_1-C_{12} alkyl or C_1-C_{12} haloalkyl.

30. The fluoroalkanol-substituted α,β-unsaturated ester of claim 29, wherein:

R^{17} is selected from hydrogen and methyl;

R^{18} and R^{19} are hydrogen;

R^{21} is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure -$(L^1)_{n1}$-CR^8R^9-OH in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^{22} is hydrogen or C_1-C_8 alkyl;

R^{24} and R^{25} are independently selected from hydrogen, C_1-C_8 alkyl, and fluorinated hydroxyalkyl having the structure -$(L^2)_{n2}$-$CR^{8A}R^{9A}$-OH in which n2 is zero or 1, L^2 is C_1-C_6 aliphatic, R^{8A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^{9A} is fluorinated C_1-C_8 alkyl;

R^{27} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl; and

R^{30} is C_1-C_8 alkyl or fluorinated C_1-C_8 alkyl.

31. The fluoroalkanol-substituted α,β-unsaturated ester of claim 30, wherein:

R^{21} is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and -$(L^1)_{n1}$-CR^8R^9-OH in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^{22} is hydrogen or C_1-C_4 alkyl;

R^{27} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

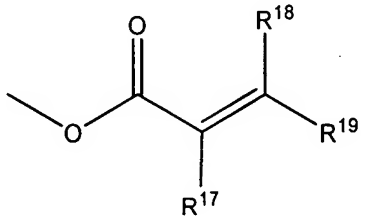
R^{30} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

32. The fluoroalkanol-substituted α,β-unsaturated ester of claim 31, wherein R^{23} and R^{26} are both trifluoromethyl.

33. The fluoroalkanol -substituted α,β-unsaturated ester of claim 31, wherein one of R^{23} and R^{26} is methyl and the other is trifluoromethyl.

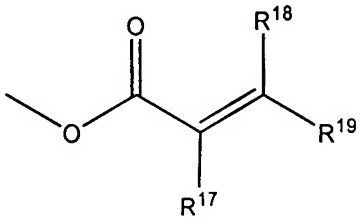
34. The fluoroalkanol-substituted α,β-unsaturated ester of claim 28, wherein R^{27} is hydrogen and R^{30} has the structure of formula (VI)

(VI)



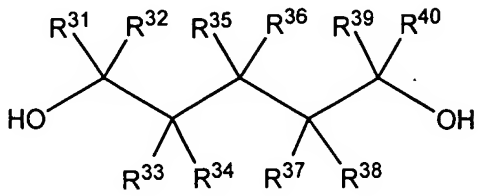
35. The fluoroalkanol-substituted α,β-unsaturated ester of claim 28, wherein R^{27} has the structure of formula (VI)

(VI)



and R^{30} is hydrogen.

36. A fluoroalkanol-substituted α,β-unsaturated ester having the structure of formula (VIII)

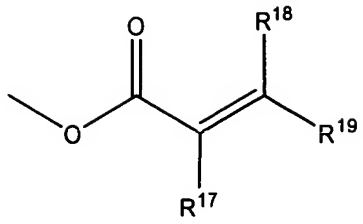
(VIII) 

wherein:

R^{31} and R^{32} are independently selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, with the proviso that at least one of R^{31} and R^{32} is fluorinated, and further wherein R^{31} and R^{32} may be taken together to form a fluorinated alicyclic group;

R^{39} and R^{40} are independently selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, with the proviso that at least one of R^{39} and R^{40} is fluorinated and further wherein R^{39} and R^{40} may be taken together to form an alicyclic group;

R^{33}, R^{34}, R^{35}, R^{36}, R^{37}, and R^{38} are selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^{33}, R^{34}, R^{35}, R^{36}, R^{37}, and R^{38} may be taken together to form a ring, with the proviso that one of R^{36} and R^{37} is hydrogen, and the other has the structure of formula (VI)

(VI) 

wherein R^{17} is selected from hydrogen, fluoro, C_1-C_4 alkyl, fluorinated C_1-C_4 alkyl, -CH_2-COOH, -CF_2-COOH, -CH_2-$COOR^{20}$, and -CF_2-$COOR^{20}$, R^{18} is hydrogen or fluoro, R^{19} is hydrogen, fluoro, or -COOH, and R^{20} is a nonhydrogen substituent;

R^{38} is selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl, or may be taken together with R^{35} to form an alicyclic group; and

R^{39} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, and R^{40} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, with the proviso that at least one of R^{39} and R^{40} is fluorinated.

37. The fluoroalkanol-substituted α,β-unsaturated ester of claim 36, wherein:

R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, -CH_2-COOH, and -CH_2-$COOR^{20}$;

R^{18} and R^{19} are independently selected from hydrogen and fluoro;

R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl;

R^{31} and R^{32} are independently selected from hydrogen, fluoro, C_1-C_{12} alkyl, and substituted C_1-C_{12} alkyl;

R^{33} is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^{34}, R^{35}, and R^{38} are independently selected from hydrogen, C_1-C_{12} alkyl, and substituted C_1-C_{12} alkyl;

R^{39} is selected from hydrogen, C_1-C_{12} alkyl, and C_1-C_{12} haloalkyl; and

R^{40} is C_1-C_{12} alkyl or C_1-C_{12} haloalkyl.

38. The fluoroalkanol-substituted α,β-unsaturated ester of claim 37, wherein:

R^{17} is selected from hydrogen and methyl;

R^{18} and R^{19} are hydrogen;

R^{33} is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^{34}, R^{35}, and R^{38} are independently selected from hydrogen and C_1-C_8 alkyl;

R^{39} is selected from hydrogen, C_1-C_8 alkyl, fluorinated C_1-C_8 alkyl, and carboxy; and

R^{40} is C_1-C_8 alkyl or fluorinated C_1-C_8 alkyl.

39. The fluoroalkanol-substituted α,β-unsaturated ester of claim 30, wherein:

R^{33} is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl,

trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^{34}, R^{35}, and R^{38} are independently selected from hydrogen and C_1-C_4 alkyl;

R^{39} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

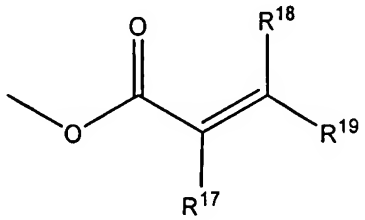
R^{40} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

40. The fluoroalkanol-substituted α,β-unsaturated ester of claim 40, wherein R^{39} and R^{40} are both trifluoromethyl.

41. The fluoroalkanol-substituted α,β-unsaturated ester of claim 39, wherein one of R^{39} and R^{40} is methyl and the other is trifluoromethyl.

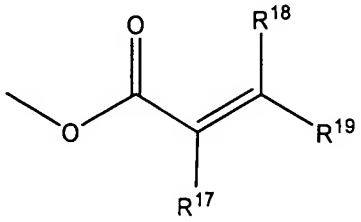
42. The fluoroalkanol-substituted α,β-unsaturated ester of claim 36, wherein R^{36} is hydrogen and R^{37} has the structure of formula (VI)

(VI)



43. The fluoroalkanol-substituted α,β-unsaturated ester of claim 36, wherein R^{36} has the structure of formula (VI)

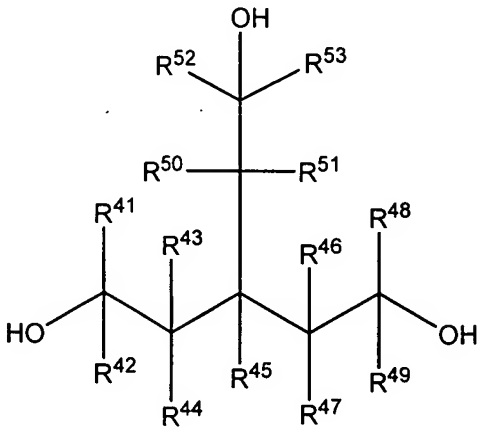
(VI)



and R^{37} is hydrogen.

44. A fluoroalkanol-substituted α,β-unsaturated ester having the structure of formula (IX)

(IX)

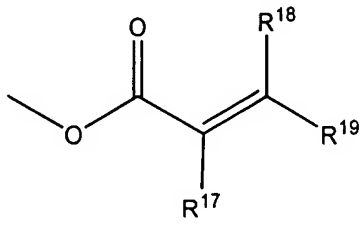


wherein:

R^{41}, R^{42}, R^{48}, R^{49}, R^{52}, and R^{53} are independently selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, with the provisos that (a) at least one of R^{41} and R^{42}, (b) at least one of R^{48} and R^{49}, and (c) at least one of R^{51} and R^{52} is fluorinated; and

R^{43}, R^{44}, R^{46}, R^{47}, R^{50}, and R^{51} are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^{43}, R^{44}, R^{46}, R^{47}, R^{50}, and R^{51} may be taken together to form an alicyclic group, with the proviso that one of R^{45} and R^{46} is hydrogen, and the other has the structure of formula (VI)

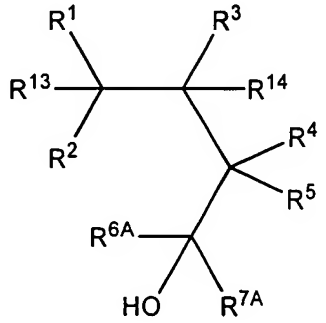
(VI)



wherein R^{17} is selected from hydrogen, fluoro, C_1-C_4 alkyl, fluorinated C_1-C_4 alkyl, -CH_2-COOH, -CF_2-COOH, -CH_2-$COOR^{20}$, and -CF_2-$COOR^{20}$, R^{18} is hydrogen or fluoro, R^{19} is hydrogen, fluoro, or -COOH, and R^{20} is a nonhydrogen substituent.

45. A method for synthesizing a fluorinated polyol having the structure of formula (IV)

(IV)



wherein

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy,

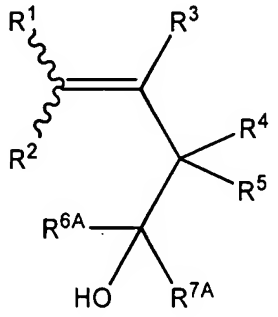
R^2, R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form an alicyclic group,

R^{6A} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino,

R^{7A} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, and further wherein R^{6A} and R^{7A} may be taken together to form a ring, with the proviso that at least one of R^{6A} and R^{7A} is fluorinated, and

one of R^{13} and R^{14} is hydroxyl and the other is selected from hydrogen and hydroxyl, the method comprising admixing an alkene fluoroalkanol having the structure of formula (III)

(III)



with a substituted or unsubstituted borane to provide a reaction mixture, and thereafter adding aqueous base and hydrogen peroxide to the reaction mixture.

46. The method of claim 45, wherein the borane has the structure $BHR^{54}R^{55}$ in which R^{54} and R^{55} are independently selected from hydrogen, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, substituted C_1-C_{24} alkoxy, or wherein R^{54} and R^{55} may be taken together to form an alicyclic group.

47. The method of claim 46, wherein R^{54} and R^{55} are independently selected from hydrogen, chloro, C_1-C_{12} alkyl, substituted C_1-C_{12} alkyl, C_1-C_{12} alkoxy, and substituted C_1-C_{12} alkoxy.

48. The method of claim 47, wherein the hydrogen peroxide is added to the reaction mixture following addition of the aqueous base.

49. The method of claim 45, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl,

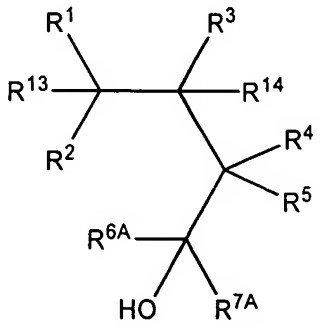
trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_5-C_{12} alicyclic group;

R^6 is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

R^7 is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

50. A method for synthesizing a fluoroalkanol-substituted α,β-unsaturated ester from a fluorinated polyol having the structure of formula (IV)

(IV)



wherein

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy,

R^2, R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form an alicyclic group,

R^{6A} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino,

R^{7A} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, and further wherein R^{6A} and R^{7A} may be taken together to form a ring, with the proviso that at least one of R^{6A} and R^{7A} is fluorinated, and

one of R^{13} and R^{14} is hydroxyl and the other is selected from hydrogen and hydroxyl, the method comprising:

contacting the fluorinated polyol with an acylation reagent selected from acyl chlorides of the formula Cl-(CO)-CR^{17}=$CR^{18}R^{19}$ and anhydrides of the formula O[(CO)-CR^{17}=$CR^{18}R^{19}$]$_2$ under reaction conditions effective to result in esterification of a hydroxyl group present at R^{13}, R^{14}, or at both R^{13} and R^{14}, to provide an -O-(CO)-CR^{17}=$CR^{18}R^{19}$ substituent, wherein R^{17} is selected from hydrogen, fluoro, C_1-C_4 alkyl, fluorinated C_1-C_4 alkyl, -CH_2-COOH, -CF_2-COOH, -CH_2-$COOR^{20}$, and -CF_2-$COOR^{20}$, R^{18} is hydrogen or fluoro, R^{19} is hydrogen, fluoro, or -COOH, and R^{20} is a nonhydrogen substituent.

51. The method of claim 50, wherein prior to admixture of the fluorinated polyol with the acylation reagent, the fluorinated polyol is treated with a deprotonating base.

52. The method of claim 51, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and -$(L^1)_{n1}$-CR^8R^9-OH in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl,

trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}$-$CR^{8A}R^{9A}$-OH in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_5-C_{12} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

R^{7A} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

53. The method of claim 51, wherein the acylation reagent is an acyl chloride of the formula Cl-(CO)-CR^{17}=$CR^{18}R^{19}$.

54. The method of claim 53, wherein R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, -CH_2-COOH, and -CH_2-$COOR^{20}$, R^{18} and R^{19} are independently selected from hydrogen and fluoro, and R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl.

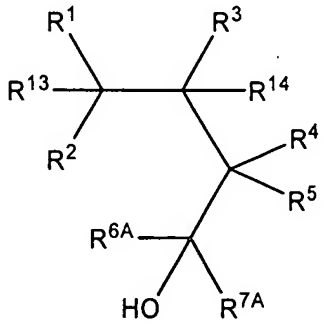
55. The method of claim 51, wherein the acylation reagent is an anhydride of the formula O[(CO)-CR^{17}=$CR^{18}R^{19}$]$_2$.

56. The method of claim 55, wherein R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, $-CH_2-COOH$, and $-CH_2-COOR^{20}$, R^{18} and R^{19} are independently selected from hydrogen and fluoro, and R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl.

57. A method for synthesizing a fluoroalkanol-substituted α,β-unsaturated ester, comprising:

(a) synthesizing a fluorinated polyol having the structure of formula (IV)

(IV)



wherein

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy,

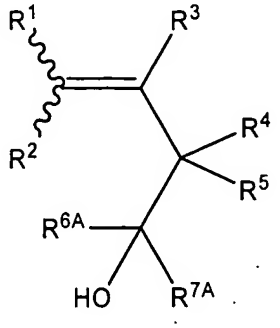
R^2, R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a ring,

R^{6A} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino,

R^{7A} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, with the proviso that at least one of R^{6A} and R^{7A} is fluorinated, and

one of R^{13} and R^{14} is hydroxyl and the other is selected from hydrogen and hydroxyl, by admixing an alkene fluoroalkanol having the structure of formula (III)

(III)



with a substituted or unsubstituted borane to provide a reaction mixture, and thereafter adding aqueous base and hydrogen peroxide, to the reaction mixture; and

(b) contacting the fluoroalkanol with an acylation reagent selected from acyl chlorides of the formula Cl-(CO)-CR^{17}=$CR^{18}R^{19}$ and anhydrides of the formula O[(CO)-CR^{17}=$CR^{18}R^{19}$]$_2$ under reaction conditions effective to result in esterification of a hydroxyl group present at R^{13}, R^{14}, or at both R^{13} and R^{14}, to provide a -O-(CO)-CR^{17}=$CR^{18}R^{19}$ substituent, wherein R^{17} is selected from hydrogen, fluoro, C_1-C_4 alkyl, fluorinated C_1-C_4 alkyl, -CH_2-COOH, -CF_2-COOH, -CH_2-$COOR^{20}$, and -CF_2-$COOR^{20}$, R^{18} is hydrogen or fluoro, R^{19} is hydrogen, fluoro, or -COOH, and R^{20} is a nonhydrogen substituent.

58. The method of claim 57, further comprising isolating the fluoroalkanol prior to (b).

59. The method of claim 57, wherein the borane has the structure $BHR^{54}R^{55}$ in which R^{54} and R^{55} are independently selected from hydrogen, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, substituted C_1-C_{24} alkoxy, or wherein R^{54} and R^{55} may be taken together to form an alicyclic group.

60. The method of claim 59, wherein R^{54} and R^{55} are independently selected from hydrogen, chloro, C_1-C_{12} alkyl, substituted C_1-C_{12} alkyl, C_1-C_{12} alkoxy, and substituted C_1-C_{12} alkoxy.

61. The method of claim 60, wherein the hydrogen peroxide is added to the reaction mixture following addition of the aqueous base.

62. The method of claim 57, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl,

trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_5-C_{12} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

R^{7A} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

63. The method of claim 58, wherein following isolation of the fluoroalkanol and prior to admixture of the fluoroalkanol with the acylation reagent, the isolated fluoroalkanol is treated with a deprotonating base.

64. The method of claim 63, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^3, R^4, and R^5 may be taken together to form a C_5-C_{12} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

R^{7A} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

65. The method of claim 57, wherein the acylation reagent is acyl chloride of the formula Cl-(CO)-CR^{17}=$CR^{18}R^{19}$.

66. The method of claim 65, wherein R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, -CH_2-COOH, and -CH_2-$COOR^{20}$, R^{18} and R^{19} are independently selected from hydrogen and fluoro, and R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl.

67. The method of claim 57, wherein the acylation reagent is an anhydride of the formula O[(CO)-CR^{17}=$CR^{18}R^{19}$]$_2$.

68. The method of claim 67, wherein R^{17} is selected from hydrogen, fluoro, methyl, trifluoromethyl, -CH_2-COOH, and -CH_2-$COOR^{20}$, R^{18} and R^{19} are independently selected from hydrogen and fluoro, and R^{20} is selected from C_1-C_{12} alkyl and substituted C_1-C_{12} alkyl.

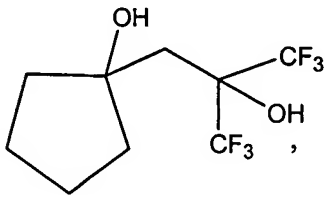
69. A method for synthesizing a fluoroalkanol-substituted α,β-unsaturated ester, the method comprising:

(a) contacting (i) an olefinic reactant directly substituted on an olefinic carbon atom with a substituted or unsubstituted methyl group with (ii) a fluorinated carbonyl compound under reaction conditions and for a time period effective to allow addition of the olefinic reactant to the carbonyl carbon of the fluorinated carbonyl compound, thereby providing an alkene fluoroalkanol;

(b) hydroxylating the alkene functionality in the alkene fluoroalkanol by subjecting the alkene fluoroalkanol to a hydroboration reaction, thereby providing a saturated fluoroalkanol containing at least one additional hydroxyl group;

(c) acylating the additional hydroxyl group by contacting the saturated fluoroalkanol with an acylation reagent selected from acyl chlorides and anhydrides under esterification conditions.

70. A fluorinated polyol selected from the group consisting of:



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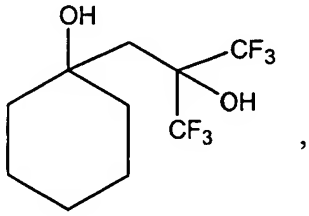

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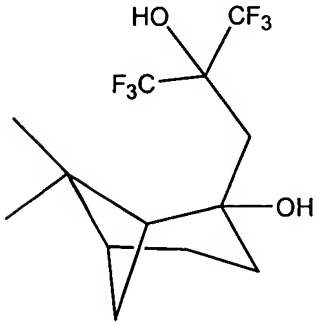

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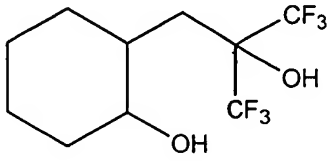

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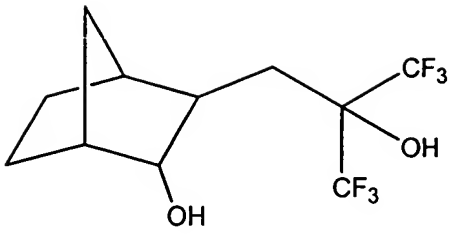

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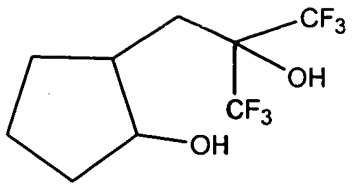

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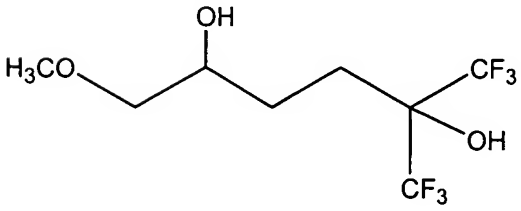

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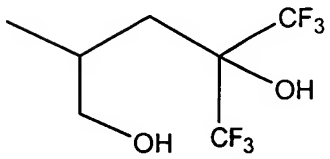

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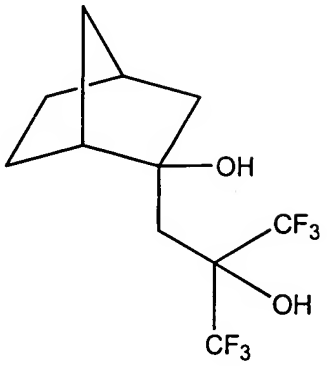
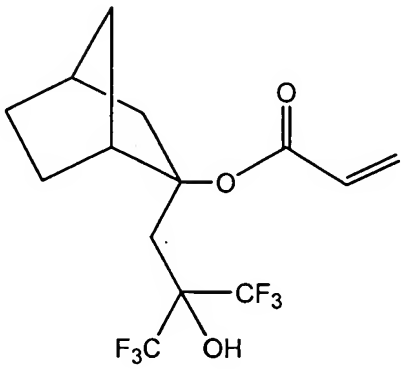
and


71. A fluoroalkanol-substituted α,β-unsaturated esters selected from the group consisting of



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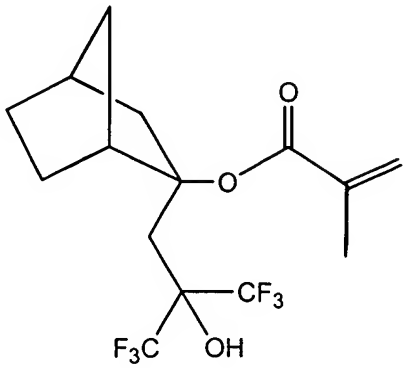

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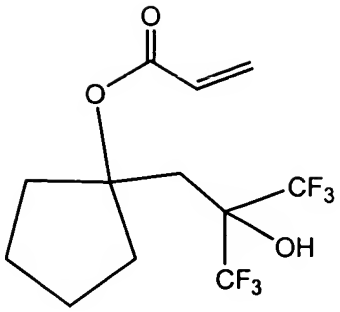
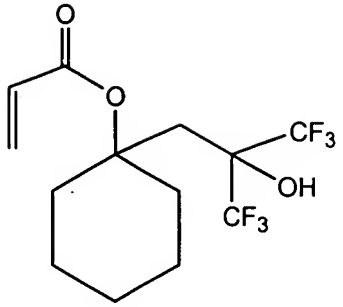
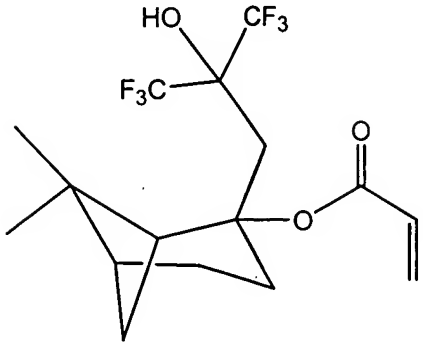
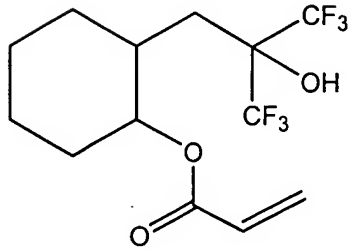
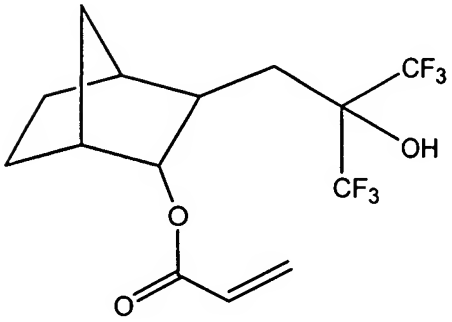
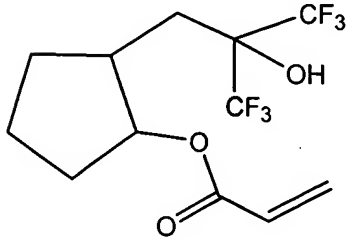
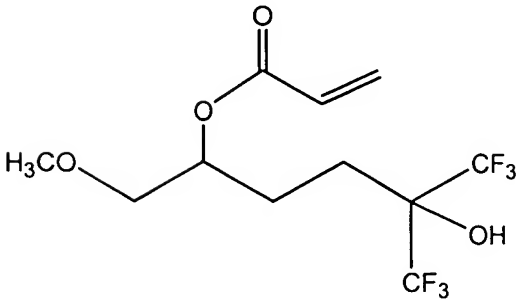
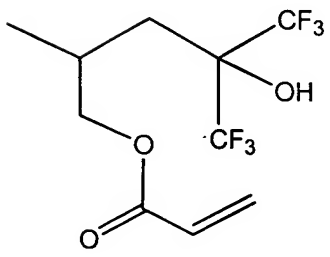
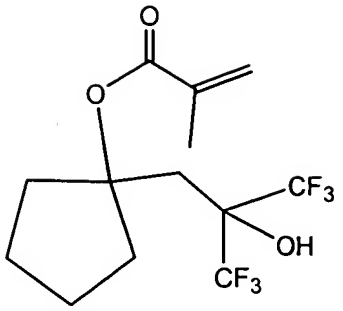
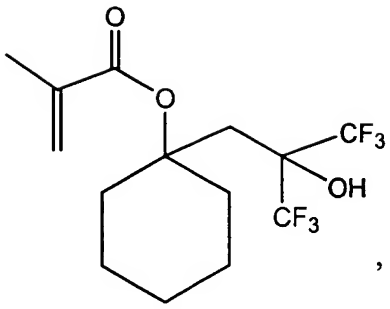
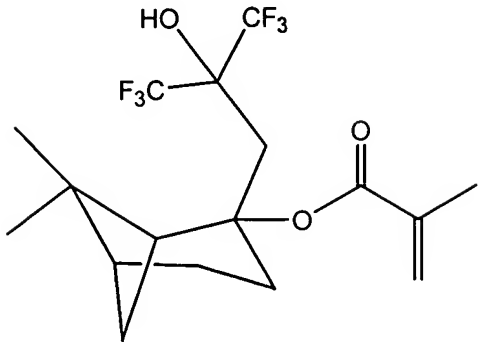
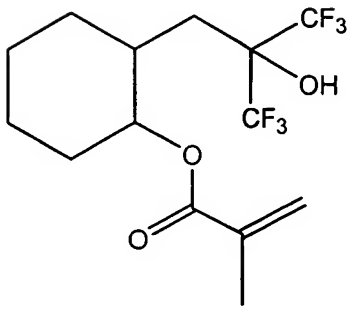
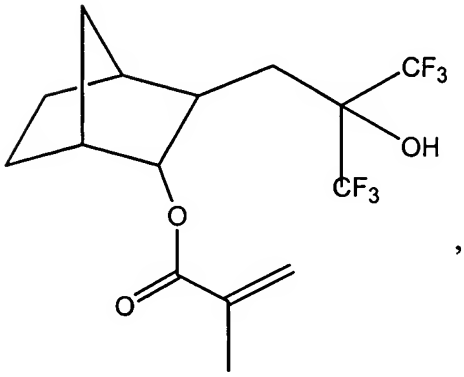
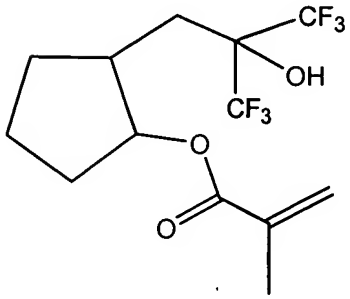
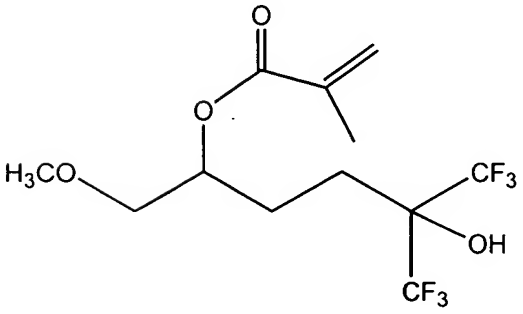
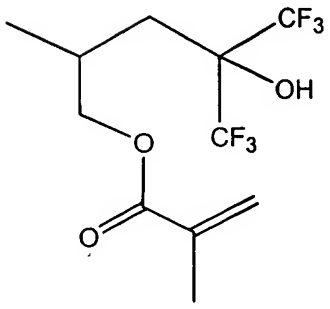
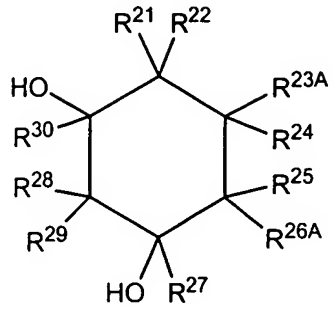

O
O
CF3
OH
CF3
,

O
O
CF3
OH
CF3
,

HO
CF3
F3C
O
O
,

CF3
OH
CF3
O
O
,

CF3
OH
CF3
O
O
,

CF3
OH
CF3
O
O
,

O
O
H3CO
CF3
OH
CF3
,

CF3
OH
CF3
O
O
,


O
O
CF3
OH
CF3
,

O
O
CF3
OH
CF3
,

HO
CF3
F3C
O
O
,

CF3
OH
CF3
O
O
,

CF3
OH
CF3
O
O
,

CF3
OH
CF3
O
O
,

O
O
H3CO
CF3
OH
CF3
and

CF3
OH
CF3
O
O
.

72. A fluorinated polyol having the structure of formula (VIIA)

(VIIA)



wherein:

R^{21} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

R^{22} is selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, or may be taken together with R^{21} to form a ring;

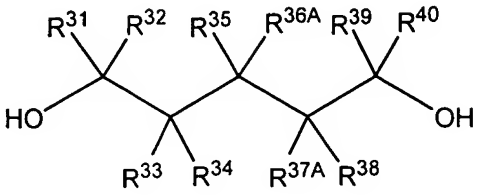
one of R^{23} and R^{26} is hydrogen, and the other is hydroxyl;

R^{24} and R^{25} are selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl, or may be taken together to form a ring;

R^{27} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, and R^{30} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, with the proviso that at least one of R^{27} and R^{30} is fluorinated; and

R^{28} and R^{29} are independently selected from hydrogen, fluoro, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, or may be taken together to form a ring.

73. A fluorinated polyol having the structure of formula (VIIIA)

(VIIIA) 

wherein:

R^{31} and R^{32} are independently selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, with the proviso that at least one of R^{31} and R^{32} is fluorinated, and further wherein R^{31} and R^{32} may be taken together to form a fluorinated alicyclic group;

R^{39} and R^{40} are independently selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, with the proviso that at least one of R^{39} and R^{40} is fluorinated and further wherein R^{39} and R^{40} may be taken together to form an alicyclic group;

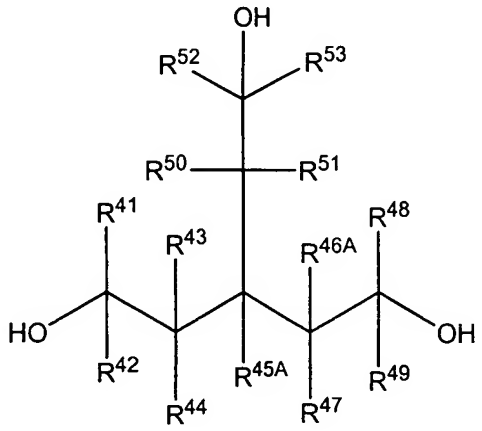
R^{33}, R^{34}, R^{35}, R^{36}, R^{37}, and R^{38} are selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^{33}, R^{34}, R^{35}, R^{36}, R^{37}, and R^{38} may be taken together to form a ring, with the proviso that one of R^{36} and R^{37} is hydrogen, and the other is hydroxyl;

R^{38} is selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl, or may be taken together with R^{35} to form an alicyclic group; and

R^{39} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, and R^{40} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, with the proviso that at least one of R^{39} and R^{40} is fluorinated.

74. A fluorinated polyol having the structure of formula (IXA)

(IXA)



wherein:

R^{41}, R^{42}, R^{48}, R^{49}, R^{52}, and R^{53} are independently selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino, with the provisos that (a) at least one of R^{41} and R^{42}, (b) at least one of R^{48} and R^{49}, and (c) at least one of R^{51} and R^{52} is fluorinated; and

R^{43}, R^{44}, R^{46A}, R^{47}, R^{50}, and R^{51} are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^{43}, R^{44}, R^{46A}, R^{47}, R^{50},

and R^{51} may be taken together to form an alicyclic group, with the proviso that one of R^{45A} and R^{46A} is hydrogen, and the other is hydroxyl.